

Appendix 2 LVIA Methodology

Introduction

- 1.1 This Landscape and Visual Impact Appraisal (LVIA) aims to determine the likely effects of the proposed development on the existing landscape and visual receptors within the study area.
- 1.2 The LVIA assesses the effects on:
- Landscape as a resource (including its character and physical landscape elements/features); and
 - Views and visual amenity experienced by visual receptors (people).

Guidance and Approach

Guidance

- 1.3 This assessment methodology for assessing landscape and visual effects is based on the following best practice guidance:
- Guidelines for Landscape and Visual Impact Assessment 3rd Edition, Landscape Institute and Institute of Environmental Management and Assessment, 2013;
 - Landscape Character Assessment Guidance for England and Scotland, Countryside Agency, 2002;
 - An Approach to Landscape Character Assessment, Natural England, 2014;
 - Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals, Landscape Institute, 2019;
 - GLVIA3 Statement of Clarification 1/13, Landscape Institute, 2013.
- 1.4 Other reference documents used to understand the baseline position in landscape terms comprise published landscape character assessments appropriate to the Site's location and the nature of the proposed development.

Approach

- 1.5 The following approach is used to assess landscape and visual effects:
- Determine the scope of the assessment;
 - Collate landscape and visual baseline information;
 - Describe and review the proposed development and the likely impacts associated with it and identify mitigation measures to prevent, reduce or, if possible, offset (for example by planting outside the site) the likely adverse impacts;
 - Assess the sensitivity of the receptors likely to be affected by the proposed development by judging value and susceptibility;

- Assess the magnitude of change for these receptors by combining judgements on scale/size of impact, its duration and reversibility;
- Assess the overall degree of significance of effects by combining judgements on receptor sensitivity and magnitude of impact.

Determining the Scope and Baseline

Study Area

- 1.6 The study area should be proportional to the scale and nature of the proposed development.
- 1.7 For landscape effects it includes the site itself and the full extent of the wider landscape around it, which the development may influence in a significant manner (directly or indirectly). For visual effects, the study area is typically associated with the extent of the potential visibility of the proposed development.
- 1.8 The study area is determined in 2 stages:
 - Preliminary study area is identified at the scoping stage. It can be based on the extent of Landscape Character Areas likely to be significantly affected by the proposed development, a Zone of Theoretical Visibility (ZTV) analysis or an analysis of the site context through desk study and field work.
 - A preliminary study area is then refined during field work and takes account of the assessor's experience, including the actual site visibility, the scale and nature of the proposed development), and the likelihood of significant landscape and visual effects in the wider landscape.

Baseline information

- 1.9 Baseline information is collated using desk study and field survey.
- 1.10 Desk study uses all available studies and materials (i.e. Ordnance Survey maps, existing landscape character assessments, planning policy documents or local guidance) that enable the identification of key baseline information, including potential landscape and visual receptors likely to be affected by the proposed development.
- 1.11 Detailed field survey of the site and its context is carried out in order to review/refine the information collated during the desk study, identify the key landscape and visual receptors that may be affected by the proposed development and attribute value to the landscape receptors.
- 1.12 Site photographs are taken using a full frame digital single lens reflex (DSLR) camera with 50mm lens and viewpoint photographs conform to the Landscape Institute's TGN 6/19 guidance for Type 1 visualisations (Annotated Viewpoint Photograph).

Assessment of Landscape Effects

- 1.13 Sensitivity of landscape receptors is assessed by combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape. Although landscape has some intrinsic sensitivity, different landscape receptors have different elements and features that can accommodate a variety of development types. Therefore, in LVIA, sensitivity is specific to the particular project or development that is being proposed and to the location in question.

Landscape value

- 1.14 The description of value of the potentially affected landscape receptors (areas of landscape, or individual elements, features or perceptual aspects) is undertaken as part of the baseline study.
- 1.15 A review of designations is a starting point in understanding the landscape value but other factors will be also taken account of, especially if existing studies on value of the landscape in question are not available or are limited. These factors include (see Box 5.1, page 84 of the GLVIA3):
- Landscape quality (condition);
 - Scenic quality;
 - Rarity;
 - Representativeness;
 - Conservation interests;
 - Recreation value;
 - Perceptual aspects;
 - Associations.
- 1.16 Table A-1 provides indicative criteria for determining the value of landscape receptors.

Table A-1 Determining landscape value

Value	Criteria
High	Predominantly nationally/Internationally designated/valued landscape. All or most criteria indicating higher landscape value are met including good condition and scenic quality; rare elements of features, strong/distinctive/important landscape characteristics; high nature conservation and/or heritage interest, high recreation value and perceptual qualities/tranquillity, historic associations. No detracting features. In some cases, landscapes designated on the local and community levels or undesignated landscapes which are of exceptional quality and meet all of most of the above criteria can also be determined as having high value.

Value	Criteria
Medium	Landscapes designated on the county or local (e.g. Areas of High Landscape Value, Regional Scenic Areas) which meet some of the criteria outlined in paragraph 1.16. For example, high nature conservation and/or heritage interest, high recreation value and perceptual qualities/tranquillity, historic associations, but lack of rare elements of features or important landscape characteristics. Some detracting features. In some cases, a part of internationally or nationally designated landscapes can be also attributed locally medium value if the only some of the criteria are met, for example if a part of such landscape is in very poor condition and is not representative of the wider character. Undesignated landscapes can also be attributed medium value if most of the criteria outlined in paragraph 1.16 are met.
Low	Predominantly undesignated landscape. Few criteria outlined in paragraph 1.16 are met. For example, landscape is in poor condition and of average or poor scenic quality; no rare elements of features, weak landscape characteristics; limited nature conservation and/or heritage interest, average or low recreation value and few perceptual qualities/ low tranquillity, no historic associations. Many detracting features. In some cases, locally designated landscape can also be attributed low value if its condition is very poor and it is not representative of the wider character, or it does not meet most of the criteria outlined in paragraph 1.16.

- 1.17 The final judgement on landscape value is guided by the criteria outlined in the Table A-1 and should be supported by a clear and transparent justification.

Susceptibility to change

- 1.18 Susceptibility of landscape receptors is assessed as high, medium or low and is based on the combination of a range of factors (based on GLVIA3, para 5.40 to 5.43):
- Landscape capacity;
 - Nature of the development (or presence of similar developments and the degree of contribution to existing landscape character);
 - Nature of landscape components (whether that can be easily substituted or not).
- 1.19 The guiding criteria for assessing landscape susceptibility to change/development proposed are provided in the Table A-2.

Table A-2 Susceptibility of landscape receptors to change/development

Susceptibility	Criteria
High	Low capacity of the receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline situation.

Susceptibility	Criteria
	The proposed development type is not present within the landscape and its addition would be out of character. Components of the landscape cannot be easily substituted.
Medium	Average capacity of the receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline situation. The proposed development type has some presence within the surrounding landscape. Components of the landscape can be easily substituted.
Low	High capacity of the receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline situation. The proposed development type is present within the landscape and its addition would be completely in line with the existing character. Components of the landscape can be easily substituted or their substitution is highly desirable (components with negative contribution to character).

Sensitivity of landscape receptors

- 1.20 Once the landscape value and receptors' susceptibility to the type of change or development proposed have been determined, the overall sensitivity of the landscape receptors can be evaluated. Table A-3 contains a guide to combining value and susceptibility in order to determine the overall sensitivity.

Table A-3 Matrix for assessing sensitivity of landscape receptors

Value	Susceptibility		
	High	Medium	Low
High	Very high	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Very low

- 1.21 Table A-4 summarises landscape sensitivity levels used in the assessment of landscape effects.

Table A-4 Landscape sensitivity definitions

Item	Description
Very high	Landscape receptor of high value and high susceptibility to change / proposed development.

Item	Description
	Typical examples include nationally/internationally designated landscapes or locally designated landscapes of exceptional quality with low capacity for the type of development proposed.
High	Landscape receptor of high value and medium susceptibility to change / proposed development or medium value and high susceptibility to change / proposed development. Typical examples include valuable landscapes (such as nationally/internationally designated landscapes or locally designated landscapes of exceptional quality) with some capacity for the type of development proposed or landscapes of average value with low capacity for the type of development proposed.
Medium	Landscape receptor of medium value and medium capacity for the type of development proposed. Landscape receptor of high / low value but low / high capacity for the type of development proposed, respectively. Examples include a variety of landscapes, such as locally designated landscapes of medium value with some capacity for the type of development proposed; nationally and internationally designated landscapes with high capacity for the type of development proposed or landscapes of low value with limited susceptibility to change.
Low	Landscape receptor of medium value and low susceptibility to change / proposed development of low value and medium susceptibility to change / proposed development. Typical examples include locally designated landscapes or undesignated landscapes with some value and high capacity for the type of development proposed or undesignated landscapes of low value with medium capacity for the type of development proposed.
Very low	Landscape receptor of low value and low susceptibility to change / proposed development. Typical examples include undesignated landscapes of low quality with high capacity for the type of development proposed.

Magnitude of landscape effects

- 1.22 Once the sensitivity of landscape receptor is established, the magnitude of change to landscape receptor is determined according to the following key criteria:
- Size or scale of impact;
 - Geographical extent of the area over which the landscape effects will occur;
 - Duration and the reversibility of the impact.
- 1.23 In assessing the size or scale of impact the judgements are made based on the:
- The extent of existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;

- The degree to which aesthetic and perceptual aspects of the landscape are altered;
 - Whether the effect changes the key characteristics of this landscape, which are critical to its distinctive character.
- 1.24 Size and scale of impact are described as total/major, large, medium, small, negligible (very low).
- 1.25 The geographical extent of impact refers to the geographical area over which the landscape effects will be felt. It can be perceived at site level, immediate setting of the site, local/community level, landscape type or area level, large scale (several landscape types or areas), regional scale.
- 1.26 The duration and reversibility of effects are separate but interlinked terms which are considered in assessing the magnitude of landscape effects. For the purpose of this LVIA, the duration of effects is described as:
- Very long term (more than 20 years);
 - Long term (10 to 20 years);
 - Medium term (5 to 10 years);
 - Short term (2 to 5 years);
 - Very short term (up to 2 years).
- 1.27 Each landscape effect is also assessed based on its reversibility. For example, housing developments are considered as irreversible, but wind farm or solar farm developments have usually a limited life and the changes to the landscape are reversible following their decommissioning.
- 1.28 The assessment of magnitude of landscape effects takes account of all three groups of criteria (and their sub criteria) and is based on a professional judgement, guided by the examples of the application of the criteria provided in Table A-5. Due to the complexity of the criteria used in the assessment of magnitude it is impossible to provide precise definitions of each degree of magnitude. Instead, typical examples are provided of how the criteria are applied at each level of magnitude.

Table A-5 Magnitude of landscape effects

Magnitude	Application of criteria – typical examples
Very High	Total/major or very large loss or addition of landscape elements and/or alteration to perceptual aspects that have crucial contribution to key characteristics on a very large/regional scale.
High	Large loss or addition of landscape elements and/or alteration to perceptual aspects that contribute to key characteristics on a landscape area/type level or large scale (several landscape areas/types). OR Total/major loss or addition of landscape elements on a local/community level or a medium loss of landscape features on a large scale.

Magnitude	Application of criteria – typical examples
Medium	Medium loss or addition of landscape elements and/or alteration to perceptual aspects that affect a limited number of key characteristics over a local/community or landscape area/type level. OR Total/major loss or addition of landscape elements and/or alteration to perceptual aspects that affect a limited number of key characteristics in the immediate site setting. OR Small loss or addition of landscape elements and/or alteration to perceptual aspects that affect a limited number of key characteristics on a very large/regional scale.
Low	Small loss or addition of landscape elements and/or alteration to perceptual aspects that have limited contribution to key characteristics on an immediate site setting or site level. OR Very small loss or addition of landscape elements on a local/community level or landscape type/area level.
Negligible	Negligible (very low) loss or addition of landscape elements and/or alteration to perceptual aspects that have limited contribution to key characteristics within the site, its immediate setting or a landscape character area/type.

Assessment of Visual Effects

- 1.29 Visual receptors are individuals and/or defined groups of people who have the potential to be affected by a proposal. The assessment of visual effects looks at the sensitivity of visual receptors to change in the landscape or townscape caused by the proposed development type.
- 1.30 Sensitivity of visual receptors is a function of the value attached to views and the susceptibility of visual receptors (people) to change in views.

Susceptibility of visual receptors

- 1.31 People generally have differing responses to changes in views and visual amenity depending on the context (location, time of day, season, degree of exposure to views) and purpose for being in a particular place. The susceptibility of visual receptors therefore depends on:
- The occupation or activity of people experiencing the view at particular locations; and
 - The extent to which their attention or interest may therefore be focussed on the views and the visual amenity they experience at particular locations.

- 1.32 The susceptibility of visual receptors is described as high, medium or low. Table A-6 provides criteria and examples of visual susceptibility levels.

Table A-6 Susceptibility of visual receptors to change/development

Susceptibility	Criteria and examples
High	The occupation/activity of visual receptors has strong relationship with the experience of the surroundings. The attention of viewers is well focussed on the views and visual amenity. Examples: Views from open and elevated positions, views from rights of way, where landscape is the primary focus of the receptor, views from designated viewpoints where viewer's full attention is on views and visual amenity
Medium	The occupation/activity of visual receptors has some relationship with the experience of the surroundings. The attention of viewers is partially focussed on the views and visual amenity. Examples: Views from rights of way (or roads, other footpaths, public areas), where receptors' are only partially focussed on the landscape, receptors' activity does not allow for full appreciation of the landscape or is primarily directed elsewhere (travelling at speed, poor condition of a footpath, etc).
Low	The occupation/activity of visual receptors has very little or no relationship with the experience of the surroundings. The attention of viewers is barely focussed or not focussed at all on the views and visual amenity. Examples: Transient views, views from enclosed locations where wider landscape is a secondary focus, receptors' activity/occupation does not allow for appreciation of the landscape, people at their place of work etc.

Value of views

- 1.33 As part of the overall assessment of visual sensitivity, the LVIA makes judgements about the value of views. It takes account of:
- Recognition of value attached to particular views, for example in relation to heritage assets, or through planning designations.
 - Indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, presence of interpretation boards, or references in literature.
- 1.34 Value of views is described as high, medium or low. For example, views of high value are likely to be from designated landscapes (such as National Parks, Areas of Outstanding Natural Value or Countryside Parks) where the condition or scenic quality of the view is higher and where distinctive elements or features form a prominent part of a

view. Views of lower value are likely to be from an undesignated area of landscapes in poor condition where the scenic quality of the view is low, detracting features are present in the view and only limited value can be attached to it by visitors.

Sensitivity of visual receptors

- 1.35 The assessment of visual sensitivity takes account of susceptibility of visual receptors and the value attached to their views.
- 1.36 Once the value attached to views and visual receptors' susceptibility have been determined, the overall sensitivity of the visual receptors can be evaluated. Table A-7 contains a guide to combining value and susceptibility in order to determine the overall visual sensitivity.

Table A-7 Matrix for assessing sensitivity of visual receptors

Value	Susceptibility		
	High	Medium	Low
High	Very high	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Very low

- 1.37 Table A-8 summarises visual sensitivity criteria used in the assessment of effects on visual receptors.

Table A-8 Sensitivity of visual receptors

Sensitivity	Descriptions and Examples
Very High	Views of high value appreciated by visual receptors with high susceptibility. Examples: - Visitors to promoted viewpoints (often with interpretation boards) within highly valued, designated landscapes; - Visitors to recreational hilltops and peaks or walkers on important public footpaths within highly valued, designated landscapes.
High	Views of high value appreciated by medium susceptibility receptors. OR Views of medium value appreciated by high susceptibility receptors. Examples: - Occupiers of residential properties; - People engaged in outdoor recreation whose attention is likely to be focussed on the landscape, such as golf, fishing; - Themed rights of way with a local association; - Panoramic viewpoints marked on OS maps;

Sensitivity	Descriptions and Examples
	- People travelling through landscape on roads, rail or other transport passing through promoted or designated scenic areas.
Medium	Visual receptors with medium susceptibility experiencing views of medium value. OR Highly susceptible receptors experiencing views of low or no value. OR Receptors with low susceptibility experiencing views of high value. Examples: - Residential locations with lower susceptibility; - General users of local PRoV and other recreational, undesignated routes with views of some local value; - Visitors to local viewpoints and resting places; - People travelling through undesignated, general landscape on roads, rail or other transport.
Low	Views of medium value experienced by low susceptibility receptors. OR Views of low value appreciated by medium susceptibility receptors. Examples: - Major road routes where receptors have low susceptibility due to travelling at speed, busy major roads; - Receptor at a place of work where visual surroundings have limited relevance; - People engaged in outdoor sport and recreation not especially influenced by an appreciation of the wider landscape e.g. pitch sports or play areas;
Very Low	Views of low value experienced by visual receptors with low susceptibility. Examples: - Users of more transitory routes such as cycle routes on roads with no scenic value; - Users of the local road network and major highways in unattractive, undesignated landscapes with many detractors; - People at their place of work but visual surroundings very limited relevance; - Users of indoor or sporting recreational facilities.

Magnitude of visual effects

1.38 Once the sensitivity of visual receptors is established, the magnitude of change is determined according to the following key criteria:

- Size or scale of impact;
- Geographical extent;
- Duration and the reversibility of the impact.

1.39 In assessing the size or scale of impact the judgements are made based on the:

- The scale of the change in view as a result of loss/addition of features and changes in their composition, including the proportion of the view occupied by the proposed development;
 - The degree of contrast or integration of any new features with the remaining characteristics of the view in terms of form, scale and mass, line, height, colour and texture;
 - The nature of the view of the proposed development in terms of the relative amount of time it will be experienced and whether views will be full, partial or glimpses.
- 1.40 Size and scale of impact are described as total/major, large, medium, small, negligible (very low).
- 1.41 The geographical extent of impact depends on the location of viewpoints and may reflect:
- The angle of view in relation to the main activity of the receptor;
 - The distance of the viewpoint from the proposed development;
 - The extent of the area over which the changes would be visible.
- 1.42 The geographical extent is described as extensive, large, medium, limited, barely perceptible.
- 1.43 The duration and reversibility of effects are separate but interlinked terms which are considered in assessing the magnitude of visual effects. For the purpose of this LVIA, the duration of effects is described as (same as for landscape effects):
- Very long term (more than 20 years);
 - Long term (10 to 20 years);
 - Medium term (5 to 10 years);
 - Short term (2 to 5 years);
 - Very short term (up to 2 years).
- 1.44 As with landscape effects, each visual effect is also assessed based on its reversibility.
- 1.45 The assessment of magnitude of visual effects takes account of all three groups of criteria (and their sub criteria) and is based on a professional judgement, guided by the examples of the application of the criteria provided in Table A-9. Due to the complexity of the criteria used in the assessment of magnitude it is impossible to provide precise definitions of each degree of magnitude. Instead, typical examples are provided of how the criteria are applied at each level of magnitude.

Table A-9 Magnitude of Visual Effects

Magnitude	Application of criteria – typical examples
Very high	Total/major or large change in the view as a result of loss or addition of landscape features within the view, change in composition, high contrast with the existing features. Typically applied to a full view, where changes are well visible. Extensive geographical extent in relation to the angle, distance and proportion of the view that is affected.

Magnitude	Application of criteria – typical examples
	Long to very long term duration with irreversible changes to the view.
High	Large change in the view as a result of loss or addition of landscape features within the view, change in composition, high contrast with the existing features with large extent in relation to the angle, distance and proportion of the view that is affected. Duration is typically long to very-long term and the effect is irreversible.
Medium	A partial (medium) change in the view as a result of loss or addition of landscape features within the view, change in composition, limited contrast with the existing features. Medium extent in relation to the angle, distance and proportion of the view that is affected. Duration may vary. Effect can be reversible or not.
Low	A small change in the view as a result of loss or addition of landscape features within the view, change in composition, very limited contrast with the existing features. Limited extent in relation to the angle, distance and proportion of the view that is affected. Duration may vary. Effect can be reversible or not.
Negligible	Negligible change in the view as a result of loss or addition of landscape features within the view, change in composition, barely perceptible contrast with the existing features. Barely perceptible extent in relation to the angle, distance and proportion of the view that is affected. Duration may vary. Effect can be reversible or not.

Significance of Effects

- 1.46 The significance of effects is determined by assessing the sensitivity of the landscape and visual receptors to change / proposed development, against the magnitude of change predicted upon them. In line with the current guidance, the assessment is made using professional judgement, as landscape and visual effects often cannot be quantified and over-reliance on matrices is discouraged.
- 1.47 However, the use of a significance matrix (see Table A-10) provides a useful guide for the initial appraisal of the significance level based of the assessed sensitivity and magnitude and the results are then refined using professional judgement with a clear and transparent justification.
- 1.48 Effects can be positive, adverse or neutral (when no change arises).
- 1.49 Effects are assessed during the construction and operational phase of the development with the assumption that all proposed landscape mitigation has established and begun to mature.
- 1.50 Table A-10 provides a significance matrix used as a guide in the final assessment of the significance of landscape and visual effects, which is carried out using professional judgement.

Table A-10 Significance Matrix

Overall Sensitivity	Overall Magnitude				
	Very High	High	Medium	Low	Very Low
Very High	Major	Major	Major/ Moderate	Moderate	Moderate/ Minor
High	Major	Major/ Moderate	Moderate	Moderate/ Minor	Minor
Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor	Minor/ Negligible
Low	Moderate	Moderate/ Minor	Minor	Minor/ Negligible	Negligible
Very Low	Moderate/ Minor	Minor	Minor/ Negligible	Negligible	Negligible

- 1.51 Table A-11 provides definitions of landscape and visual effects. In Landscape and Visual Impact Assessments forming a part of an Environmental Impact Assessment (EIA), all effects above moderate level are assessed as 'significant'

Table A-11 Definitions of landscape and visual effects

Item	Description
Major	Fundamental changes resulting in a complete or near complete variance with the landscape resource or visual amenity.
Moderate	A material but non-fundamental change to the landscape resource or visual amenity.
Minor	A slight but non-material change to the landscape resource or visual amenity.
Negligible	A detectable but non-material change to the landscape resource of visual amenity or a non-detectable change to the landscape resource or visual amenity.

Non-EIA appraisals

- 1.52 Standalone LVIA reports which do not form part of an Environmental Impact Assessment follow the same principles and methodology as LVIA reports prepared for EIA purposes.
- 1.53 However, in a standalone LVIA effects are not assessed as 'significant' or 'not significant', which is in line with Landscape Institute's GLVIA3 Statement of Clarification 1/13. In such standalone LVIA, which are typically called 'appraisals', only a degree/level of effect is provided according to the table A-11, above.